

1
2
3 WHAT IS CLAIMED:
4

5 1. A sorption unit for air-conditioning and heat technology ap-
6 paratus with sheets for thermal conduction, past which a working medium
7 is guided, said sheets being in contact with a sorption medium, wherein
8 said sorption medium forms string-shaped profiled bodies (4) which are de-
9 signed such that by ^(1, 2, 2') them surface contact with said sheets (3, 3') can be
10 created and that channels (6) for passage of the working medium are
11 formed by means of said string-shaped profiled bodies (4).
12

13 2. The sorption unit as defined in claim 1, wherein said work-
14 ing medium is water and said sorption medium is a mineral, zeolite in par-
15 ticular.
16

17 3. The sorption unit as defined in claim 1, wherein said work-
18 ing medium is water and said sorption medium is salt.
19

20 4. The sorption unit as defined in claim 1, wherein said work-
21 ing medium is ammonia and said sorption medium is carbon.
22

1 5. The sorption unit as defined in one of the preceding claims,
2 wherein said channels for passage of the working medium are formed in
3 said profiled bodies and extend in longitudinal direction of said profiled
4 bodies.

6 6. The sorption unit as defined in claim 5, wherein said chan-
7 nels for passage of the working medium are arranged with axial symmetry
8 with respect to the longitudinal direction of the profiled bodies.

10 7. The sorption unit as defined in claim 6, wherein said chan-
11 nels for passage of the working medium have a circular diameter.

13 8. The sorption unit as defined in claim 6, wherein said chan-
14 nels for passage of the working medium have a square diameter.

16 9. The sorption unit as defined in claim 6, wherein said chan-
17 nels for passage of the working medium have a square diameter with
18 rounded corners.

20 10. The sorption unit as defined in one of claims 5 to 9, wherein
21 in each profiled body respectively one channel for passage of the working
22 medium is arranged in the center of the cross-section of the body.

1 11. The sorption unit as defined in one of claims 5 to 9, wherein
2 said profiled body has a square cross-section.

3
4 12. The sorption unit as defined in claim 5, wherein said profiled
5 body includes two, three or several neighboring sections, each section rep-
6 resenting a profiled body as defined in claim 11.

7
8 13. The sorption unit as defined in claim 1, wherein said chan-
9 nels (6) for passage of the working medium are formed between neighbor-
10 ing profiled bodies (4).

11
12 14. The sorption unit as defined in claim 13, wherein said pro-
13 filed bodies (4) at least to a great extent have the shape of a double T.

14
15 15. The sorption unit as defined in claim 13, wherein said pro-
16 filed bodies (4) at least to a great extent have the shape of an X with
17 closed top and bottom sides.

18
19 16. The sorption unit as defined in one of the preceding claims,
20 wherein said sheets (3, 3') are built as double sheet elements, wherein the
21 space between said double sheets is filled with said string-shaped profiled
22 bodies (4).

1 17. The sorption unit as defined in one of the preceding claims,
2 wherein said string-shaped profiled bodies (4) have different lengths and
3 arranged in parallel with one another.

4
5 18. The sorption unit as defined in one of the preceding claims,
6 wherein a plurality of double sheet elements form a package arranged in
7 pile and/or one beside the other.

8
9 19. The sorption unit as defined in one of the preceding claims,
10 wherein the ends of said string-shaped profiled bodies (4) are formed such
11 that openings through which working medium can flow as well are formed
12 between adjacent ends of said profiled bodies (4).

13
14 20. A buffer means for arrangement between a sorption unit and
15 a condenser/evaporator unit of an air-conditioning technology apparatus,
16 through which a working medium, vapor in particular, can be guided, char-
17 acterized by a labyrinth-like separation means (12), for water in particular.

18
19 21. The buffer means as defined in claim 20, characterized by a
20 construction out of a plurality of sheets arranged in parallel with one an-
21 other, each of which comprises imprints (11, 14) on both sides, said im-
22 prints serving as spacers to the respectively neighboring sheet and/or as
23 collecting recesses for liquid droplets.

1
2 22. The buffer means as defined in claim 20, characterized by a
3 pipeline which has rib-like projections serving as cooling ribs on its outer
4 side.

5
6 23. The buffer means as defined in claim 20 or 21, wherein said
7 pipeline is equipped with an armature for closing said pipeline.
8

9
10 24. A condenser/evaporator unit for air-conditioning and heat
11 technology apparatus, characterized by a labyrinth-like liquid separation
12 means, wherein a plurality of sheets (9a, 9b, ...) arranged in parallel with
13 one another is provided for, each of which having imprints (11, 14) on
14 both sides, which serve as spacers to the respectively neighboring sheet
15 (9a, 9b, ...) and/or as collector recesses for liquid droplets.
16

17 25. The condenser/evaporator unit as defined in claim 24,
18 wherein said imprints (11) extend in arc-shaped bend.
19

20 26. The condenser/evaporator unit as defined in claim 24,
21 wherein the mutual distance between said imprints (11, 14) is constant.
22

1 27. The condenser/evaporator unit, as defined in claim 24,
2 wherein the mutual distance between said imprints (11, 15) is variable.
3

4 28. The condenser/evaporator unit for air-conditioning and heat
5 technology apparatus, wherein a liquid separation means comprising a hol-
6 low body formed by at least two semicups (15, 16) mutually connected on
7 the rims, in which an inlay (17) made from severely hygroscopic material is
8 received.
9

10 29. The condenser/evaporator unit as defined in claim 28,
11 wherein said inlay (17) consists of an absorbent glass fiber material or felt
12 material and has an essentially areal extension.
13

14 30. The condenser/evaporator unit as defined in claim 28 or 29,
15 wherein said inlay (17) is held by a support structure (18).
16

17 31. The condenser/evaporator unit as defined in one of the pre-
18 ceding claims 28 to 30, wherein said support structure (18) comprises at
19 least one sieve sheet.
20

21 32. The condenser/evaporator unit as defined in one of the pre-
22 ceding claims 28 to 31, wherein said inlay (17) is held between two sieve
23 sheets (18).

1
2 33. The condenser/evaporator unit as defined in claim 28,
3 wherein said sheet semicups (15, 16) comprises stampings serving as
4 spacers (19) and/or for stabilization of said semicups (15, 16).
5

6 34. The condenser/evaporator unit as defined in claim 28,
7 wherein several inlays (17) are arranged one on top of the other and are
8 kept at distance to one another by spacers (20).
9

10 35. The condenser/evaporator unit as defined in claim 34,
11 wherein said spacers (20) are formed by said support structures which
12 have the shape of a meander, a zigzag shape, or a wave shape and/or the
13 like.
14

15 36. The condenser/evaporator unit as defined in one of the pre-
16 ceding claims 28 to 35, wherein for stabilization said support structures
17 comprise imprints (21, 22) distributed across their surface and arranged at
18 alternating sides.
19

20 37. The condenser/evaporator unit as defined in one of the pre-
21 ceding claims 28 to 36, wherein said sheet semicups (15, 16) and/or said
22 support structures (18, 20) are surface treated for improving the hygro-
23 scopic properties.

1
2 38. An apparatus for air-conditioning technology, in particular re-
3 frigerating apparatus or heat pump, characterized by a sorption unit (2) as
4 defined in one of claims 1 to 19, a condenser/evaporator unit (7) as defined
5 in one of claims 24 to 37 and a buffer means (8) as defined in one of
6 claims 20 to 23.

7
8 39. The apparatus for air-conditioning technology as defined in
9 claim 38, wherein in said sorption unit (2) and/or said buffer means (8)
10 and/or said condenser/evaporator unit (7) stampings (10) which define
11 cross channels in case of apparatus components (2, 7, 8) put one on top of
12 the other, by which channels an air flow or the like (13) can be created are
13 provided for in the sheet metal walls.

14
15 40. The apparatus for air-conditioning technology as defined in
16 claim 39, wherein said stampings (10) each extend at alternating sides
17 across a part of the width of said sorption unit (2) and/or said buffer means
18 (8) and/or said condenser/evaporator unit (7) and are arranged on both sur-
19 faces of said apparatus components.

20
21 41. The apparatus for air-conditioning technology as defined in
22 one of claims 38 cont.', wherein in the interior of the apparatus during op-
23 erating a pressure is prevailing that is lower than air pressure.

1
2 42. The apparatus for air-conditioning technology as defined in
3 one of claims 38 cont.', wherein said sheet metal walls (3, 3') on the in-
4 side of said buffer means (8) and/or said condenser/evaporator unit (7) are
5 roughened mechanically and/or chemically.
6

7 43. The apparatus for air-conditioning technology as defined in
8 one of claims 38 cont.', wherein said apparatus is formed out of several
9 packages connected subsequently, of sorption unit (2), buffer means (8)
10 and condenser/evaporator unit (7), through which an air stream is forcibly
11 passed such that the waste heat absorbed by the cool air stream, of the
12 one sorption unit is used for regeneration of the following sorption unit.
13

14 44. The apparatus for air-conditioning technology as defined
15 claim 43, wherein a heating means is provided for serving for increase of
16 air temperature of the air stream serving for regeneration.
17

*add
E4*